

D 202.13: 36/7



# approach

January 1991



**CREW COORDINATION  
ISSUE**

# “Get along with your brother or I’ll kill you both!”

Two-thirds of the way through my first squadron tour, I was a fat, dumb and happy RIO. During my nugget cruise, I was crewed with a senior lieutenant who was very conservative and a solid ball flyer. A few months later, I became the “Skipper’s RIO” and stayed there for the duration of his tour, which lasted halfway through my second cruise. My idea of a “night in the barrel” was one trip around the bolter pattern during the “pinkie” recovery.

Then came the mid-cruise change-of-command. I realized flying with the new skipper would be tough because the backseat would be awfully crowded and no one would be up front to salute the cat officer.

Enter my new nose-gunner. Fresh from a TacOrg-falling out with his old RIO who happened to be the maintenance officer, he was well on his way toward the LSO Eyebrow-Raising Hall-of-Fame. Color around the boat wasn’t this guy’s only problem. My new pilot demonstrated the classic gap between his perception of his ability and his actual ability, which made for a less-than-optimum learning curve. His standard response to constructive criticism from any source was, “I know, I know.”

My problems were compounded by the fact this pilot had already gone through two senior RIOs. If he hadn’t listened to them, why should he listen to me?

Our pairing was a trial by fire. During our first night hop we marshalled in a snow storm. After a FAM-I systems discussion, I finally convinced my pilot to select “override” on the anti-ice switch. (He initially replied, “I’m in ‘auto.’ We’ll get a light if we start to ice up.”)

Three bolters and a fruitless debrief later, I’d begun to realize what being a fleet RIO could mean. The next day,

following a near midair with an F-15 off the coast of Morocco, my destiny was clear. I was on the back of Duane Allman’s motorcycle and we were trolling for peach trucks!

In an academic vacuum, crew coordination is a step-by-step process of communication and understanding. In real, JP-5-laced life, it is often about flying with ham-fisted, pedantic jerks who are out to kill you.

I wish I could say that eventually this pilot and I worked out our differences and became friends, but we didn’t. Even as we manned-up together for the 49th time, I dreaded the idea of sitting behind this guy for two hours.

No, we weren’t friends, but we were a crew. Our SOP didn’t say anything about the two going together. The SOP did mention “safe and orderly conduct of operations,” which basically means we needed to bring back the jet we left with. We did that every time. Some better friends crewed together didn’t...

This issue marks the end of my tenure as editor of APPROACH. Thanks to everyone who helped make the last 22 months the most enjoyable and rewarding of my naval career to date: LCdr. Dave Parsons, Derek Nelson, Peter Mersky, Cdr. “Pogo” Reid, Capt. Ken Craig, Capt. Bill Mooberry, Bob Trotter and everyone in graphics, Bill Church, Bill Reid, Drivin’ n’ Cryin’, the folks at Windmark recording, Cdr. “Wizard” Doyle, Cdr. “Bolter” Berger, Cdr. “Smoke” Davis, Lt. “Genghis” Kahn, the VF-43 paraloft crew, Hank Caruso, Bob Lawson and the Tailhook Association, the staff of the Naval Aviation Museum, and most importantly, all the professionals in the fleet who took the time to send us inputs.

*I dreaded the idea of sitting behind this guy for two hours... No, we weren’t friends, but we were a crew.*

# approach



Vol. 36 No. 7/January 1991

## FEATURES

**Like the Teenager Who Dented Dad's New Car** 2  
By Lt. R.J. Rathert

**Out-of-Control IUT** 5  
By Capt. Paul Dimarco, USMC

**My New Best-est Buddy** 6  
By Lt. G.M. Renner

**Interpretations of NATOPS — (an observation)** 8  
By Cdr. Ed Cox

**More Shocking Oversights** 9  
By LCdr. Dave Butler

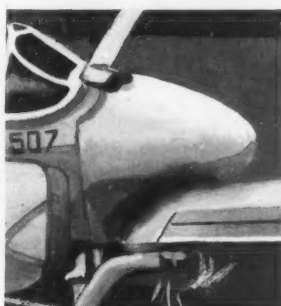
**It Seemed Like a Good Idea At the Time** 10  
By Ltjg. Mark Dunham

**Touch & Go . . . or Stay?** 12  
By Lt. Daniel McNamara

**A.C.T. for the P.C.L.** 14  
By Capt. Robert M. Zeisler, USMC

On the cover:  
Staff artist John Williams depicts a breakdown in crew coordination.

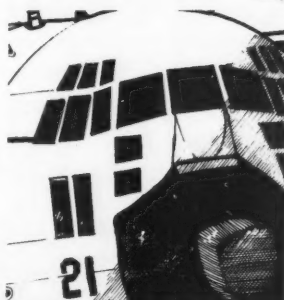
APPROACH (ISSN 0570-4979) contents should not be considered directive and may not be construed as incriminating under Art 31 of the Uniform Code of Military Justice. Views expressed in guest-written articles are not necessarily those of the Naval Safety Center. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law. It is funded and printed in accordance with all Navy publishing and printing regulations and approval of the Navy Publications and Printing Policy Committee. Second-Class Postage Paid at Norfolk, Va., and additional mailing office. Approach is available for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. POSTMASTER: Send address changes to APPROACH Magazine, Naval Safety Center, NAS Norfolk, VA 23511-5796.



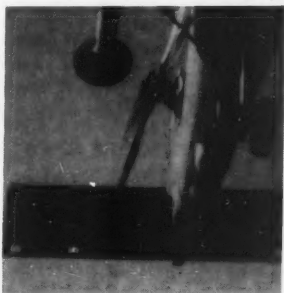
see page 2



see page 6



see page 12



see page 22

**Bugsmasher at One, No, Three, Make It Seven O'Clock!** 16  
By LCdr. P.M. Wickliff

**My First Real Sea Story** 18  
By AMS1 R.A. Sunzo

**Back, Back, Back, Back!** 22  
By Lt. William Knehans

**Coordinate, Aviate, or, How I Got ACT'd** 24  
By Lt. Steve Chennault

**Thor's Wakeup Call** 26  
By Lt. Glenn Cosnell

**Near Hummer-Bummer** 28  
By Lt. Clifford D. McGlamry

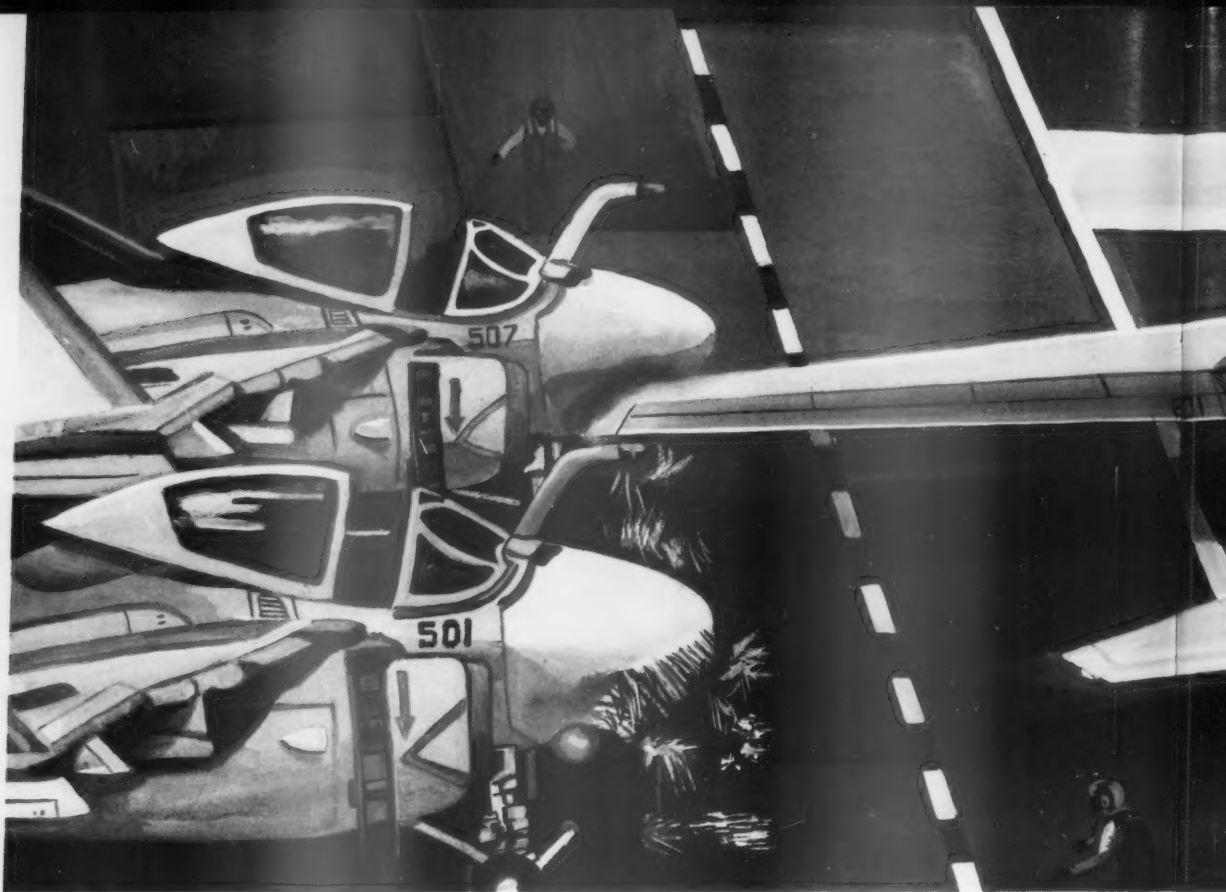
**Calm, Cool . . . and Ejected** 30  
By Lt. Steven Molter

**40 Feet From History** 32  
By LCdr. Rick McHarg

## DEPARTMENTS

Bravo Zulu 20  
Brownshoes in Action Comix IBC

RAdm. J.H. Finney, Commander, Naval Safety Center  
Col. John P. Oppenhuizen, Deputy Commander  
Capt. W.J. Mooberry, Chief of Staff  
Capt. K.G. Craig, Director, Aviation Safety Programs  
Cdr. John D. Reid, Head, Media and Educational Support  
Lt. Ward Carroll, Editor  
Peter Mersky, Asst. Editor  
Robert Trotter, Art Director  
Approach is a monthly publication published by the Commander, Naval Safety Center. Address comments, contributions and questions about distribution and reprints to:  
Commander, Naval Safety Center  
NAS Norfolk, VA 23511-5796  
Attention Approach — Code 71  
Telephone: Commercial 804-444-7416; Autovon 564-7416



2

## *“Like the Teenager Who Dented Dad’s New Car”*

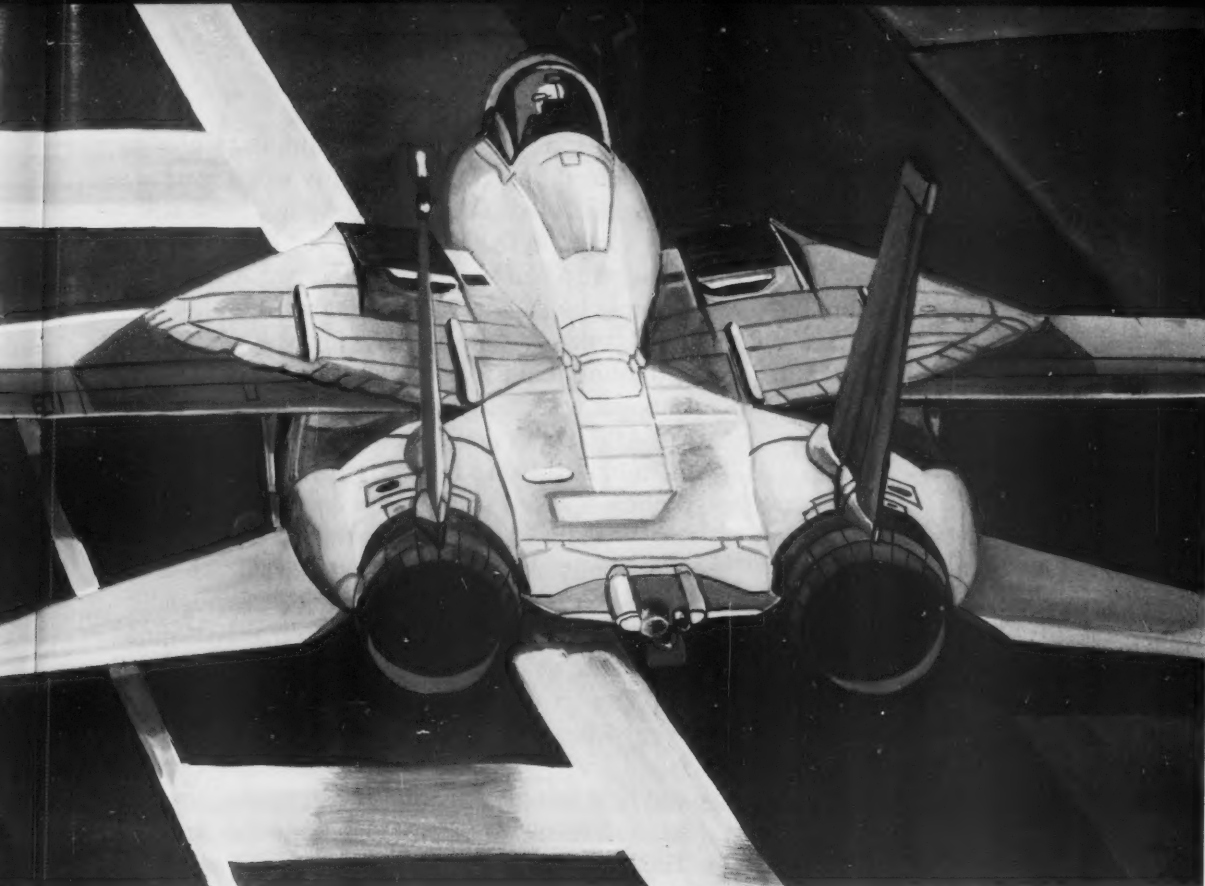
By Lt. R.J. Rathert

**“Power in the wires!”** The LSO’s call reverberated in the relative silence of the F-14’s cockpit as the four-wire gave the comforting tug indicating a successful trap.

It was the kind of night that turns nuggets into salty aviators, replete with “There I was...” stories. The moon was full, but the standard SoCal OpArea marine layer brought the ceiling down to 400 feet. The blackness underneath was the kind only aviators know and it seemed even starker in contrast to the moonlit skies above.

Our mission was simple enough: night refresher CQ. It had only been a month since my last trap and with a whopping 50 traps in my logbook, I felt confident that with a little skill, some beginner’s luck and my trusty RIO behind me, I would do fine.

After a thorough brief, we launched and headed directly for marshal. A few nuisance lights pestered us, including a launch-bar light that seemed a little too persistent. But, we evaluated them all and had everything under control.



We flew circles in the stack for 90 minutes but finally got our call to push. I took several deep breaths of oxygen to shake off the fatigue and nosed over. We had determined that a low fly-by was the best way to handle the question about our launch bar. I was glad to have the chance to also check the weather before trying a real approach.

"Looks OK from here," the LSO said as we climbed into the bolter pattern and the goo.

All right, time to earn today's paycheck, I thought as the clouds engulfed us and the carrier below us disappeared. Ignore that vertigo. Concentrate on the instruments. Relax, relax. You've done all this before...

"Well right of course and correcting," the ship called, "slightly below glideslope, three-quarters of a mile. Call the ball."

"Hawk your lineup, Tomcat," the LSO said. "Twenty-seven knots, port winds. Don't settle. Power. Power! Wave it off!"

Swell. The skipper will be pleased. Alright, shake it off, concentrate and fly those needles...VSI.

"On glidepath, slightly above glideslope and holding..." the controller called.

OK, there's the ball. Slightly high and climbing. Little power off, DLC...don't go flat.

"Bolter, bolter!"

Well, everyone's in the ready room now. ◀

"My heart sank as I checked the wingsweep button and found it in the neutral position. I felt like the teenager who had just dented his father's new car."

**"With its 64-foot wingspan, a Tomcat with its wings fully extended is the proverbial bull-in-a-china-shop."**

Enough playing around, time to bring this beast aboard. Ignore the lump in my throat and the sweat under my helmet.

Concentrate,

scan, scan. Again, I found the ball slightly high and on the rise. I will not bolter again! Power off...DLC...more power off, more DLC...

"Power in the wires!"

"Now I've done it," I said dejectedly to my RIO as I retarded the power and secured the lights. The director indicated that we were going to spin in the landing area and park on elevator 4. By his emphatic gestures, I knew that the interval was going to be tight.

4 I ignored the quivering in my knees as I raised the flaps and programmed the wings aft. Rather than doublecheck the switch position or glance at the wingsweep-position indicator, I shot a look over my shoulder at the EA-6B on final to better gauge the time I had to clear the landing area.

The yellow-shirt was signalling furiously now and after a slight jog to the left, he called for a hard right turn. After 120 degrees of turn, he passed me off to another director 100 yards away, aft of the island. He, too, was signalling rapidly to come ahead. I complied with a solid goose on the power. Meanwhile, my RIO had asked a few questions about the pass. He was also concerned about our interval and clearing the landing area.

"Slow it down, 200!" The voice from the tower that struck fear into the hearts of mere mortals blasted into my headphones. I started to brake but noticed something was wrong out of the corner of my eye. Why were all those people running toward the left side of my jet?

Instinctively, I hit full brakes and the plane

halted despite the director's continuing signal to come ahead. As I looked left, my worst fears were confirmed. The Tomcat's wings were still fully spread at their 20-degree position and the left wingtip had passed through two A-6 radomes like a hot knife through butter. My heart sank as I checked the wingsweep button and found it in the neutral position. I felt like the teenager who had just dented his father's new car. After I shut down, I saw that the damage included the F-14's left wingtip, a repairable radome and one scratched radome.

With its 64-foot wingspan, a Tomcat with its wings fully extended is the proverbial bull-in-a-china-shop. Within the confines of a Forrestal-class flight deck, maneuvering in that configuration made a mishap inevitable.

How could we have broken the chain of events? For one thing, our crew coordination failed. I was preoccupied with getting aboard and increasingly frustrated with my failure to do so. As a result, my concentration broke down. The less-than-stellar pass and the LSO's high-profile call for power further degraded my already scrambled brain.

The spin aft led me to break my normal habit pattern as well, and rather than fall back on the standard cleanup checklist, my RIO and I let ourselves get swept away by events. We concerned ourselves more with clearing the landing area than with the basic task of making sure our aircraft was in the right configuration. We also let ourselves be rushed by the yellowshirts rather than determine our own safe taxi speed for the conditions on the flight deck.

Several people, including my RIO and I, could have broken the chain. I should have doublechecked the wings in oversweep. My RIO and the directors should have spotted my oversight. The flight isn't over until you're chocked and chained, and the No. 1 engine is spooling down. Respond to distractions properly, but stick to the basic program. I should also have used my checklist; it was designed for such situations.

Lt. Rathert is an F-14 pilot with VF-21.

# Out-of-Control

By Capt. Paul E. DiMarco, USMC

I was scheduled for three hops on a hot, humid summer day in south Texas. The first flight had gone well and I was looking forward to more of the same on the second and third. The second flight was a NATOPS-6 Check Flight. This hop is the IUT's initial NATOPS evaluation before he is designated a pilot-in-command.

I hadn't flown with this IUT, so I had no preconceptions about his flying abilities. However, he impressed me with his preflight preparation. He knew the answer to every NATOPS question on aircraft systems, operating limitations and emergency procedures. The preflight inspection was just as good. He even knew where the compressor bleed valve was, and what it did. This guy was sharp! I thought the hop would be a piece of cake.

After a smooth start and takeoff, we began the flying evaluation with some typical high work, mainly approach-turn stall, skidded-turn stall, loop and high-altitude power loss. Again, he impressed me with his smooth basic airwork and outstanding knowledge of procedures.

"Let's try some inverted flight," I said.

"Okay," he replied, and I settled back expecting another perfect maneuver. He went through the preliminary procedures and began a slow aileron roll to the inverted position. Flying inverted in the T-34C requires that you keep the aircraft nose about 20 degrees *above* the horizon in order to maintain level flight.

Things deteriorated rapidly. Once we were inverted, he began

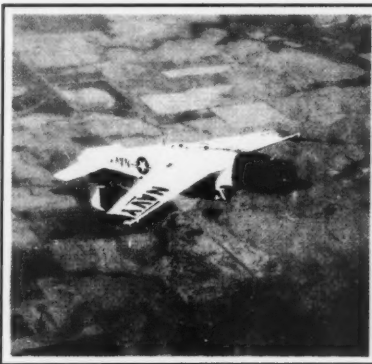
pulling back-stick while adding power to max-allowable.

"Hey, what the heck are you doing?" I called. He didn't answer.

As our nose continued to pitch down toward the Gulf of Mexico and our airspeed rapidly decreased, I yelled, "Roll out!" Still no answer.

Now I understood that he was disoriented and I shouted, "I've got the controls!"

Our indicated airspeed was 340 knots, and the altimeter was unwinding faster than I thought possible. It reminded me of the unwinding clock in a cheap time-machine movie. The slipstream noise



was deafening and the airplane was shaking violently.

NATOPS says that the maximum airspeed limit while inverted is 220 knots. Also, scuttlebutt said that when Pax River did the original evaluation of the T-34C airspeed envelope, a test pilot reached 350 knots at which point the tail section broke off the aircraft. The pilot and plane were lost.

At this point, my survival

**approach/january 1991**

instincts took over as I began the NATOPS procedures for out-of-control flight recovery. Neutralize controls, power to idle, roll to upright position, wings level, pull back-stick and hope that the nose comes up before we run out of altitude.

We began at 8,500 feet AGL, and finally recovered at 1,900 feet. I estimate the total elapsed time from his beginning the aileron roll until we recovered to be 45 seconds.

After regaining control, we climbed back to a safe altitude. It took a while for my heart rate to return to normal. We did a controllability check, followed by a straight-in approach to a full-stop landing.

We had covered all the maneuvers the IUT would perform in the brief. I'd even asked him if he had any questions. He'd said, "No." I, therefore, assumed he had ample time to practice these maneuvers during his previous NATOPS flights. My error; since he had no questions, I should have had a few more for *him*. Later, I discovered that inverted flight had been demonstrated to him on his NATOPS-2 flight, but he had not actually done it on his own.

Even though my copilot impressed me, I should have kept up my defenses. He might have been a great guy and an outstanding pilot, but there was a reason why there were two of us in the airplane.

Capt. DiMarco is an instructor pilot with VT-28.

# my new best- est buddy

By Lt. G.M. Renner

a conglomeration of flying skills and techniques are fire-hosed to the fledgling pilot as he enters the world of Naval Aviation.

Because we have to train pilots to fly single-seat aircraft, crew coordination is generally forgotten. A newly winged pilot flying a multi-seat aircraft must overcome his single-seat mentality, especially when the mission suddenly changes into safely bringing the aircraft home with multiple problems.

En route to the target area during a night bombing mission, my BN and I saw a power surge on our instruments. As we checked for the source, a second surge occurred along with the loss of our console lights and both UHF radios. I turned for home, thinking, I hope this doesn't get too interesting.

A series of malfunctions followed. We lost both flight hydraulic pumps, wing pressurization and cockpit lighting. We had three of the seven indications of a bleed-air failure.

Following NATOPS, I secured the bleed-air isolation valves, but focused most of my concentration on flying the aircraft. My BN had his PCL out, carefully going through the emergency procedures. He was also running a D/R plot and trying to communicate with his PRC-90.



Things settled down for the moment and we had time to talk. We knew the weather was good at homeplate and that FCLPs were in progress. We decided to circle overhead above the pattern and take our own landing interval.

Suddenly, I saw a bright flash from the landing gear handle, followed by smoke and fumes in the cockpit. We had the field in sight and we saw the tower's steady green aldis lamp clearing us for an immediate landing. On final, my BN kept his flashlight on the altimeter, VGI, and VSI instruments, while I held mine on the instrument panel. We flew the approach without a hitch and made an arrested landing.

Once on deck, we had time to think about what happened. Our crew coordination helped a lot. We instinctively divided responsibilities, probably because of the emphasis the A-6 community places on such teamwork. My main responsibility was to fly the plane. The BN's primary concern was completing the emergency procedures, navigating, and other copilot duties. Throughout our flight home, we talked to each other, telling each other what we were doing.

Having two people working together gave us the luxury of dividing primary responsibilities; it decreased our individual workloads and kept us from being overtasked. The only way this process can work is if both crew members provide useful information. If communication had broken down, we probably would have missed a particular task. Assuming too much is usually the first step toward destruction.

The only way that both aircrew can handle complex missions and emergencies is if each person constantly checks on the other and ensures that each job is done right. This teamwork increases the chance of returning safely from those "interesting" hops. ◀

Lt. Renner was an A-6 pilot with V A-95 at the time of this story. He has since reported to VT-21.

*Having two people  
working together  
gave us the luxury  
of dividing primary  
responsibilities...*



# Interpretations

## of NATOPS -(an observation)

By Cdr. Ed Cox



8 The community I come from seldom makes headlines or gets into this magazine. We don't usually find ourselves in extremis, at night, on the ball with a pitching deck ahead. We do, however, share a common book called the NATOPS. We also have to obey the same laws of physics every other community does.

I fly the C-12. With more than 2,000 hours in type, I have flown with pilots who have backgrounds in every Naval Aviation community. With very few exceptions, I can tell a pilot's community just by what he does in the cockpit and how he reacts to emergencies; in other words, by his interpretation of NATOPS. This fact alarms me. How much of NATOPS is subject to interpretation? I know NATOPS is not a substitute for sound judgement. I'm talking about things that have little to do with sound judgement.

I have seen a frightening number of pilots who will fly an aircraft while it's in a "down" status. I once checked out an airplane for flight that had been used for initial pilot training that had no working avionics on the copilots side (several downing gripes), would pressurize on deck (a downing gripe), would not pass any of the run-up checks (many downing gripes), had a year-old, prop-seal gripe and a long-standing gripe on the rudder boost actuator. The airplane had been used to train new C-12 drivers how

to ignore NATOPS. They studied for their training flights, then watched an instructor "blow off" NATOPS procedures without a second thought.

I've seen a gripe written by an experienced senior officer and aviator that said, "Circuit breaker popped seven times in flight. Would not reset." I've seen pilots take an airplane with a broken fire-detection system and fly VIPs from A to B. I've watched pilots take off with a Master Caution light, no annunciator, and no clue of what the malfunction might have been.

How can these things happen? Frankly, too many aviators lack what it takes to make the tough calls required to fly safely. I'm not talking about the pilot who hates to fly and downs the airplane for invalid items. I'm talking about the pilot who compromises safety because of other factors, like a bad case of "get-home-itis." For years I've heard "if we went by NATOPS we'd never get the job done." If you hear that, just log in the old computer that the speaker is a future statistic.

Remember, it's bad headwork to use any of the following excuses when standing at the end of the long green table (with no ashtray at your end): "All the guys do it"; "We were just trying to get the hop out"; or "We agreed we could make it."

Cdr. Cox is the Safety Officer for USS Enterprise (CVN-65).

OPNAVINST 4780.27E Volume V 1 January 1988

No. SWP 4826

ENTRIES REQUIRED SIGNATURE

VIDS/MAF

USE BALL POINT PEN/INK

ACCUMULATED 2400 HOURS

| NAME  | DATE | TIME | REMARKS             |
|-------|------|------|---------------------|
| WEBB  | 3004 | 1:00 | 1 0 3005 1200 1 1 0 |
| STONE | 3004 | 1:00 |                     |
| LEE   | 3004 | 1:00 |                     |
| WEBB  | 3005 | 2:00 | 2 0                 |
| STONE | 3005 | 2:00 |                     |
| LEE   | 3005 | 2:00 |                     |

REPAIR CYCLE

REMOVED OLD ITEM

INSTALLED NEW ITEM

REMOVE #2 ENGINE FOR 600 HOUR INSP

REMOVE AND REPLACE ENGINE

AD2 Webb

AD1 Ford

ADC Herman

ADZ Rezin

Figure 6-175 Removal and Replacement (Solely for IMA Inspection)

6-175

# More Shocking OVERSIGHTS

By LCdr. Dave Butler



PH1 Ronald Beno

6

The Prowler community recently lost an aircraft during an attempted takeoff with flaps up. I couldn't believe that anyone could forget to put their flaps down. How could the aircrew become so distracted that they completely forgot about their own safety? Well, I had my own little "crisis" that gave me some answers while also raising a few tougher questions. Takeoffs with flaps up are not a new phenomena in aviation, as shown by the DC-9 airliner mishap in Detroit.

The euphoria of the fly-off was typical. We knew that GQ drills, sliders and the smell of gray steel were far behind. The rollout on the concrete runway ensured that the tough part was past and a home-cooked meal was only two legs away. Our brief, preflight and startup went fine and we started our taxi as soon as the INS light began blinking. Without plane captains, we finished our pre-takeoff checks at en route fields quickly—and this brisk pace contributed to our problem.

The right-seater, an ECMO who was not part of our regular crew, went through the checklist. Although he was doing it properly, I interrupted him at regular intervals for taxi instructions or clearance verification at the unfamiliar field. A progressive taxi would have helped.

After a lengthy back-taxi, we were cleared and switched. After run-up, much to my consternation, the antiskid light came on, indicating that I needed to turn on the antiskid. After the climbout, we settled down for a long leg. I examined

the antiskid to see why it had been left off and to check to see if we had forgotten anything else. Something just didn't feel right and a sick feeling crept into my stomach as I realized what it was.

It was hard to say "Let's arm our seats," especially with two very senior officers in the back. I suddenly felt very warm. It's incredible that four aircrewmembers forgot to arm their seats, but that's not the point; how was this important check deleted from the challenge-and-reply checklist?

When do distractions overcome SOPs? The amount of concentration required to prevent distraction varies depending on the workload. Several small distractions will overcome an already fatigued or overloaded aircrew; an aircrew which is better prepared will have to encounter a more significant problem. We'll always have annoying little problems on any flight. We need to recognize that we are being pulled away from our main areas of concern and deal with the distraction.

Every aviator has had his attention diverted at some time or another. In my case, the flyoff, landing at a strange field, and, perhaps not having my regular crew, helped set me up for a potentially hazardous situation. This crew had a combined total of more than 10,000 hours; you'd think one of us would have remembered to arm the seats.

LCdr. Butler is an EA-6B pilot with VAQ-130.

# It Seemed Like a Good Idea At the Time

By Ltjg. Mark Dunham

My RIO and I were feeling pretty good as we popped off the VR route following a successful TARPS mission. On the low level, we photographed each target on time and now we were heading home VFR. We had plenty of fuel on board and the flight home would only take 30 minutes.

En route, we talked about what a great job we had done and our plans for the upcoming weekend.

Then, my RIO asked, "Have you ever been into the local F-15 base?"

"No," I said as I checked the fuel—we still had plenty. I already anticipated his next question.

"How about doing a touch-and-go there on the way home?"

I thought about it for a minute. We discussed the possibility. My RIO had been to the Air Force Base several times before and we decided it would be good training in case I had to divert there some time in the future.

"Sounds good to me," I said.

We were still VFR and my RIO looked over his card for the right approach frequency. I got out the approach plate to familiarize myself with the field. We discussed the field diagram and checked in with approach. In retrospect, I think we did a good job preparing ourselves to get into the AFB but we said little about getting from there to our NAS, just 20 nm to the south.

"We'll just go VFR," my backseater said, and I accepted that judgment.

We got vectors to the break and made our touch-and-go without any problems. On the climbout, I thought that this was a lot more interesting than droning straight home. But, in that 20 miles to home we would pass close to another NAS and Eastcoast International. I was starting to think that going VFR and not talking to anyone wasn't such a great idea.

"Are you going to call the NAS and tell them we are transiting their area?" I asked.

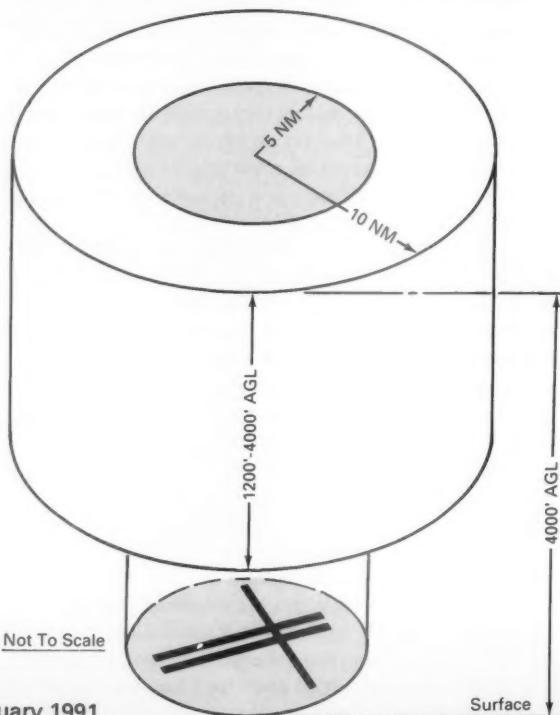
"No," my RIO replied, "I think if we bring it left we'll stay out of their airspace."

As we turned left, it looked like we would be outside the NAS's Airport Traffic Area, and our current heading would also keep us clear of the municipal field. We had our home field in sight and I felt comfortable, but not happy with the way we had navigated through this congested area. My feeling of comfort quickly evaporated, however, when we checked in with approach. They told us to give International's approach a phone call after we landed.

When we called, the controller said we had allegedly gone through International's ARSA by 300 feet without proper clearance.

"An ARSA?" we both exclaimed, "What the hell is that?"

Later, as we communicated the possible flight violation up the chain of command, I became intimately familiar with what an ARSA is. An ARSA—Airport Radar Service Area—has a basic standard design with minor site-specific variations. It consists of two circles centered on the primary airport it serves. The inner circle has a five-nm radius, and the airspace goes from the surface to 4,000 feet AGL.





11

The outer circle has a 10-nm radius and includes the airspace from 1,200 feet AGL to 4,000 feet AGL. The structure is usually compared to an upside-down wedding cake. The only requirement to transit the ARSA is two-way radio communication. (See the Airman's Information Manual for details.) I had not heard of an ARSA even when flying T-34s at Whiting during primary training. Most of my flying since then has included IFR clearances in an out of MOAs and Warning Areas.

Looking back on this incident, with a possible flight violation looming, I should have done a few things. My RIO and I should have briefed the leg from the F-15 AFB to NAS Homebase more efficiently. We should have talked about headings, altitudes and frequencies. Such a discussion might have brought out our ignorance of the airspace in the area before we flew into it.

If I wasn't really sure of the airspace restriction myself, I should have insisted on an IFR clearance. Efficient aircrew coordination requires a certain

amount of trust, and when done correctly, coordination makes for a better flight. However, blindly trusting somebody, as I did because he had "done this before," can lead to problems. This is not to say that pilots and NFOs shouldn't trust each other, but they should be continually checking one another during the flight.

Don't plan on flying VFR without proper charts. ARSAs are only shown on civilian Sectional and Terminal Control Area Charts, neither of which are carried in most tactical jets.

I was surprised to find that DoD doesn't publish any chart that shows ARSAs. Low Altitude En Route Charts do have some VFR information, such as divers and VR routes, but, according to the people at NOAA in Washington, D.C., these charts are not intended for VFR navigation. There are plans to change the name from Low Altitude En Route to IFR Low Altitude En Route to avoid the confusion. ◀

*Ltjg. Dunham flies F-14s with VF-102.*



PH1 M. Flynn

12

# Touch & Go

By Lt. Daniel T. McNamara

**I** was more than ready for my last syllabus flight before my P-3 plane commander checkride. Any simulated malfunctions were fair game and the instructor was supposed to act like an inexperienced copilot making common errors for me to catch. We planned to bounce in the pattern before heading to a nearby warning area for the high work. I was in the left seat as we took off and turned downwind for the first touch-and-go.

My first approach was high and, to my embarrassment, I flared high. I touched down further than I intended and I quickly directed the other pilot to reset the flaps and trim tabs as we watched the boards fly by.

I called for the briefed power and followed through as the flight engineer (FE) advanced the power levers. Up to this point, the flight-station team was relaxed and coordinated. Then we started making mistakes.

As the FE advanced the power levers, the master caution light for pressurization lit and he called it out. Since touch-and-go aborts were on the syllabus, I assumed it was a simulated malfunction. There was 3,000 feet remaining so I announced the abort and pulled the power levers back to flight idle.

The instructor assumed I would continue the takeoff since we had nearly 100 knots. He called "rotate," and began pulling back on the yoke. The split-second between the time we realized what had happened and when the instructor took control and continued the abort seemed like several minutes. He applied maximum reverse and light braking, and we rolled right to the end of the runway. (We

later found out that the problem was an engine-driven compressor for cabin pressurization that sheared a shaft at touchdown.)

After a few deep breaths (and a few choice words), we determined that we had both called out our intentions at the same time and had not heard each other. We discussed abort criteria and our expectations under various scenarios. Either option—taking off or aborting—would have been correct, but not both.

This incident made malfunctions during touch-and-goes a part of our weekly hangar-flying discussions. Increased training on the subject emphasizes that plane commanders should have specific limits for aborts and also that they should take control of the aircraft during an actual malfunction. They shouldn't wait to see if the junior pilot makes the right decision.

Now, every squadron plane commander has these personal limits and briefs them before flying with an unfamiliar crew. These malfunctions have become a graded part of the every follow-on trainer for pilots who complete the training syllabus. The simulator graphically demonstrates mistakes.

Lt. McNamara flies P-3s with VP-47.

# ...or Stay?

*Either option—  
taking off or  
aborting—  
would have been  
correct, but not  
both.*



approach/january 1991

# A.C.T. for the P.C.L.

By Capt. Robert M. Zeisler, USMC

A CH-46E is flying in a multi-aircraft trooplift over rugged, mountainous terrain when the master caution light comes on. Both pilots look at the warning panel where the chip-detector light is also lit. They check the transmission pressure and temperature gauges, which show an increase in forward transmission temperature beyond NATOPS limits.

14 The crew discusses the problem and begins immediate-action steps for transmission failure. The pilot at the controls (PAC) lowers the collective to minimum power, being careful not to autorotate. He reduces airspeed to 65 knots and looks for a place to land while minimizing directional control inputs.

His copilot makes sure that the cyclic trim is in auto, makes a call to the lead, and helps select a landing zone while continuing to monitor the gauges.

The crew chief prepares the passengers in the cabin for an emergency landing. He then moves to his station to help find a landing zone and ensure that the zone is clear.

This scenario shows what *should* happen. It applies to any multi-crewed aircraft, rotary- or fixed-wing. The crew coordination was textbook perfect and resulted in a safe landing. However, in the fleet, there are too many examples of breakdowns in aircrew coordination which kill people and destroy equipment.

The Navy and Marine Corps have increased emphasis on Aircrew Coordination Training (ACT). Civilian firms are paid to develop curricula for FRS and fleet squadrons to make sure ACT is as an important an element as knowing aircraft limitations. But, sometimes we overlook our own procedures when it comes to emergencies and systems failures. In the above example, the aircrew functioned like a well-oiled machine. What NATOPS procedures did they follow?

The CH-46E NATOPS gives the following steps for imminent transmission failure:

A1-H46AD-NFM-500

|                               |                           |
|-------------------------------|---------------------------|
| IMMINENT<br>TRANSMISSION FAIL | IMMINENT<br>TRANS FAILURE |
|-------------------------------|---------------------------|

CAUTION

1. Collective—reduce to minimum power.
2. Airspeed—adjust to 65 knots.
3. Cyclic trim—auto
4. Directional control input—minimize
5. Landing—land as soon as possible with minimum power. If a drive failure occurs, land without applying engine power.

Do these five steps reflect what happened in that helicopter the moment the master caution light lit until the aircraft was safe on deck? Yes and no. Yes, the crew carried out the steps, but no, not in the exact way they are written in NATOPS.

This sequence is great for a single-seat aircraft like the Hornet where the pilot has to do the procedures himself. In multi-crewed aircraft, we are behind in how we handle emergencies and failures.

**It's time for all NATOPS managers of multi-crewed aircraft to rewrite procedures to reflect the need for crew coordination.**

**For example, the emergency procedures for "Imminent Transmission Failure" could be rewritten like this:**

A1-H46AD-NFM-500

**IMMINENT TRANSMISSION FAIL** **IMMINENT TRANS FAILURE**

**CAUTION**

**PAC:**

1. Collective—reduce to minimum power. Do not autorotate.
2. Airspeed—65 knots.
3. Directional control inputs—minimize.
4. Landing—land as soon as possible using minimum power.

**Copilot:**

1. Cyclic trim—auto.
2. Monitor instruments.
3. Help the pilot to land.

**Crew chief:**

1. Ensure the passengers are ready for emergency landing.
2. Help select a landing area and ensure obstacle clearance.

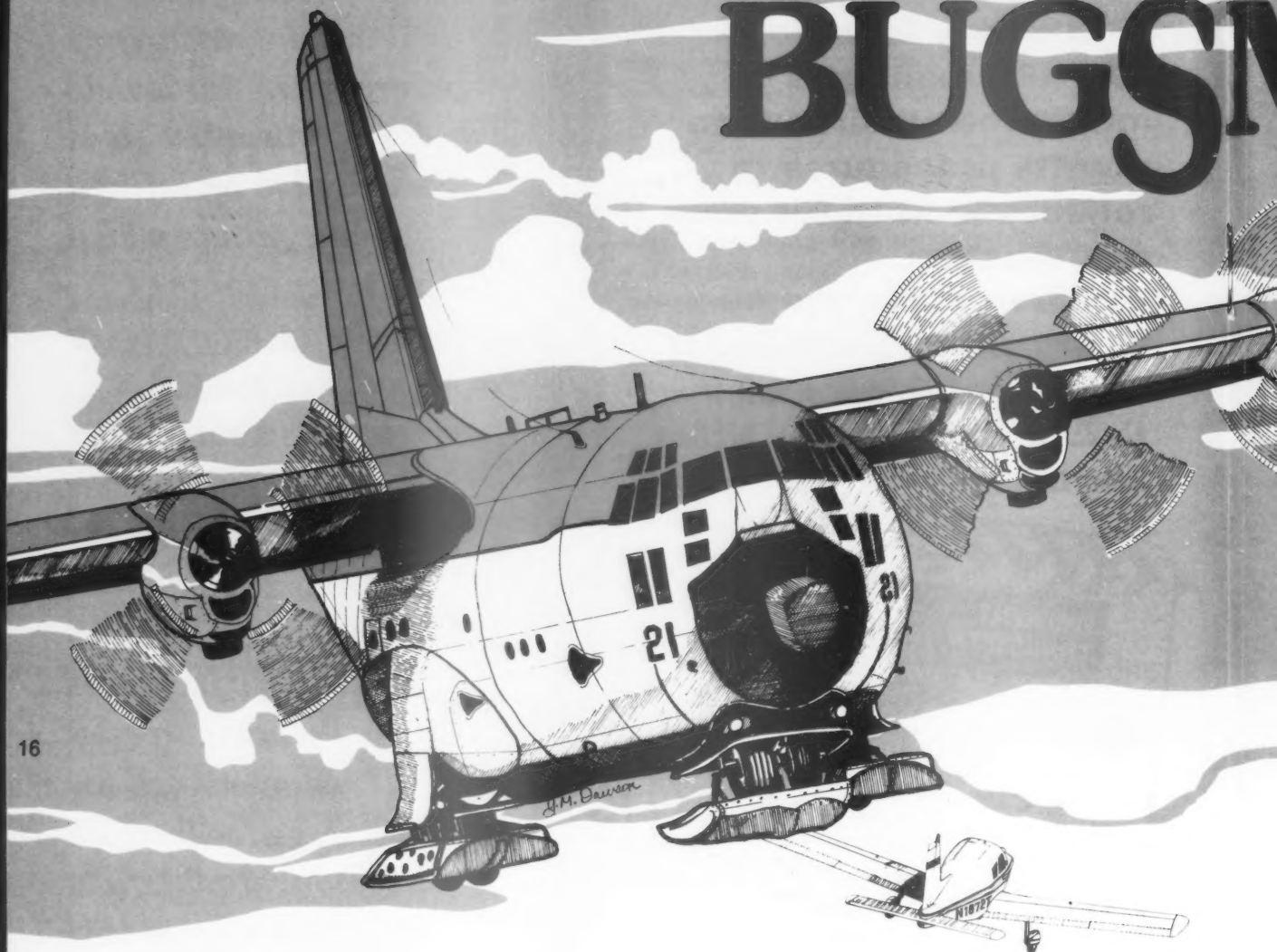
*The emergency procedure in this article has only a few steps compared to an inflight engine failure which has 11 steps for the CH-46E. An inflight engine fire in the CH-46E includes 18 emergency steps. These problems could exist especially during IFR conditions or at sea. There are documented instances*

*where aircrews 15 compounded the emergency through poor coordination. Let's throw out that single-pilot mentality which is so evident in our NATOPS manuals.*

*Don't leave any question in a crewmember's mind as to who does what and when. ◀*

Capt. Zeisler is a CH-46E pilot with HMM-268. When he wrote this article he was the DOSS for the squadron and helped apply ACT to squadron SOP.

# BUGS



16

**I**t was late afternoon as we finished a training flight in our LC-130. We had flown from a seldom-used nearby airport for most of the hop, and now it was time to RTB. As we descended from cruise altitude, we checked for other traffic from two conflicting civilian airfields within a six-mile radius of our home base.

We asked for a PAR. A couple of minutes after switching to the final controller, we heard the steady, familiar drone of the glideslope and heading calls as we began our final descent for landing.

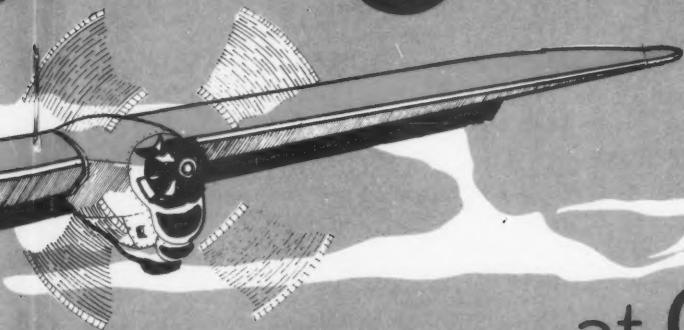
The weather was excellent for an oceanside air station. There was a broken layer at 2,000 feet and five miles visibility in haze, hard to come by in those warm, fog-shrouded, summer months. But, good weather also brings an increase in airborne bugsmashers so we maintained our

lookout. It was not uncommon for an approach controller to call out three or four contacts in a single traffic advisory. This day was no exception.

I was slightly above glideslope when we entered the clouds at 2,300 feet MSL; all eyes turned to the instruments. There's a certain comfort that comes with flying in the clouds in a radar environment. The responsibility of maintaining clearance from other traffic seems to move from the pilot's shoulders to the controller. However, this comfort can quickly disappear when the VMC aircraft around you are receiving never-ending traffic calls and you're in the goo.

As we exited the cloud layer at 2,000 feet MSL, the instructor pilot (IP) in the right seat swore and jerked back on the yoke, pulling it from my hands. I immediately

# SMASHER. . .



## at One, No, Three, Make It Seven O'Clock!

17

By LCdr. P.M. Wickliff

looked out of the cockpit to catch a glimpse of a single-engine, low-wing aircraft passing 20 feet under our nose from our one o'clock to seven o'clock position. We held our breath, expecting to feel the bump of a collision at any second. When a reasonable amount of time had passed, we requested a visual approach and told the final controller of our near mid-air.

He hadn't seen a thing on his scope. We couldn't believe it. I couldn't help thinking that if the IP hadn't looked outside the second we cleared the clouds, the indelible impression in my mind might have been on our aircraft.

We should have always had someone – preferably everyone – looking outside while we were VMC, especially when simulating IFR conditions. Knowing the capabilities of the radar of the facility always helps. The precision radar directing our approach only painted

transponder squawks, therefore, no squawk, no radar contact.

The SOP at our NAS is to ask approach radar – the kind that paints hunks of metal – to monitor our approach. When flying VFR, we should stay far enough away from clouds. Scud-running can give you a close encounter of the permanently-dead kind.

By the way, we never learned the identity of the other aircraft. We reviewed the radar tapes, and an aircraft squawking 1200 suddenly appeared about two minutes after the incident, heading in the same direction as our “bogey.” It's amazing how sheer terror of a Hercules head-on can make someone look around his cockpit to see what he forgot to turn on – like a transponder! That pilot will have a good sea story to tell for a long time. He's lucky that he'll be around to tell it.

LCdr. Wickliff flies with VXE-6

**O**ur West Coast P-3C squadron was on detachment from our Far East deployment site. Our crew had been away for a few days with a week left to go. I was a third-tour flight engineer (FE) with three WESTPAC deployments under my belt. Although I never had to sit quietly off on the side listening to other people's sea stories, I had never had big problems as an instructor FE. I had simulated almost every malfunction. Through hangar flying with other engineers and pilots, I had discussed hundreds of problems as well. But, until that first "biggie" happened, I was never sure what would go through my head, even though it was crammed with NATOPS procedures.

We started the mission with a 0200 preflight. Before going on det, our aircraft had several repeat gripes for an oil leak in the port wheel well. All the gripes had been signed off. The wheel well had been wiped down and the maintenance crew had made ground turns, but they couldn't find the leak. During the preflight, we didn't find anything out of the ordinary in the well and we launched on time at 0400.

18 At 500 feet MSL, we took numerous pictures of the bad guys. The No. 1 engine was shut down to save gas in case we needed it later. We had completed the loiter shutdown and restart checklists and reviewed the pilot and FE briefs.

After five hours on station, we climbed to our return altitude. The port aft observer watched as we started the No. 1 engine. Passing through 6,500 feet, the No. 2 firewarning light came on and the horn sounded. This isn't happening, I thought.

"Fire on No. 2," I called.

The second pilot, who was also a qualified PPC, in the left seat called, "Feather No. 2, HRD [high-rate discharge fire-extinguisher system] emergency shutdown checklist."

We feathered No. 2 with the emergency shutdown handle and discharged the HRD. We then completed the emergency shutdown checklist up to the circuit breaker for the oil-tank shutoff valve. The PPC called the aft observer and asked if he saw any sign of fire in No. 2.

The observer reported white smoke billowing from the No. 2 engine. With the fire warning lights

still on, we decided to reset the valve circuit breaker for the No. 2 oil tank shutoff. After confirming the propeller was feathered, the 2P called, "Hold the checklist. Restart No. 1."

The No.1 engine started normally but seemed to take forever. Now, a minute-and-a-half after the horn sounded, the lights were still on and the observers still saw smoke from No. 2.

I called, "You have No. 1, sir." The pilot advanced the power and we started accelerating in case our fire extinguishing system didn't work. At least we would be ahead of the game when it came time to blow the fire out. Approximately three minutes after we first saw the fire, the light went out and the aft

## My First Real S



observer said the smoke was dissipating. The plane commander declared an emergency with our safety-of-flight controller and asked for radar vectors to homeplate, 95 nm away. Things were starting to calm down a little as we turned for home and completed the emergency shutdown and restart checklists.

We called the ASWOC and told them we were coming back on three engines. To our surprise, the center said there was no P-3 support available at our det site and we should consider diverting to a field that was 90 minutes flying time away. After a brief discussion, the flight station crew decided that safety of flight took priority over available support; we would head for the closest suitable field.

# Sea Story

By AMSI R.A. Sanzo



We landed without further incident and discovered that the scavenge line for the rear turbine had failed, creating an excessive oil leak in the hot section (zones 1 and 3) and an oil fire. We removed and replaced the turbine assembly. After a successful turbine runup, the aircraft returned to service.

I learned how important briefs really are. How many times do you and your flight station team simply rattle off your individual brief items after a loiter shutdown? Each time you hear the other guy's brief, put yourself in a different situation and think it all the way through. Check each other and learn.

After the fire was out, I couldn't remember if I had hit the HRD button. I will hit it again on the checklist to back myself up. The PPC later confirmed that he had seen me hit the button the first time.

This incident showed me how quickly things can go from good to very bad. The fire jumped up and got us when we were climbing out and ready to restart No. 1. It's not hard to picture us in bad shape if we had had two engines out on one side at 500 feet, a few knots below loiter airspeed.

Who said there are no oil-fed fires on P-3s? When we talk about setting the circuit breaker for the oil-tank shutoff valve, how many times have you heard "The only oil-fed fires we get in P-3s are tailpipe fires and our HRDs won't help"?

Our fire was oil-fed and it was external to the engine. A combination of setting the circuit breaker for the oil-tank shutoff valve and the first HRD did the trick. Another item to consider is that the oil took a lot longer to burn off after we set the circuit breaker than the 10 seconds we give it on our annual checkrides. By letting the oil burn off, we saved a fire bottle that we might have needed later.

Who cares about available support? True, there's a guy in the ASWOC doing his job but when it's your fire, going beyond a field with a suitable runway seems far-fetched. Our maintainers arrived that day with a turbine section, gathered the support they needed and had us back in the air in a day-and-a-half.

Training and sticking to procedures kept us out of trouble on this flight, and gave me a real sea story. There we were...

AMSI Sanzo is an instructor FE and operations petty officer with VP-9.

19



Lt. Bob Aiken  
Lt. Jeff Petit  
AWC Donald Branagan  
AE2 Charles Tinsley  
VS-33

Left to right: Lt. Bob Aiken, Lt. Jeff Petit, AWC Donald Branagan, AE2 Charles Tinsley

As Lt. Aiken (pilot) lined up his S-3A to make a package check on a KA-6D's D-704 refueling store, he and his crew saw the hose-and-drouge assembly detach from the store. The basket and hose hurtled toward the Viking's canopy. Lt. Aiken pushed the nose down and rolled left, away from the KA-6. The drouge struck the S-3's starboard engine nacelle, lodged at

the 5 o'clock position and entered the fan. The hose whipped along the S-3's fuselage came up and over the starboard wing, and punctured the leading-edge flap. Then it wrapped back under the engine, struck the starboard drop-tank and fell away from the aircraft.

Lt. Aiken and Lt. Petit (COTAC) secured the right engine, declared an

emergency and prepared to recover on board USS *Constellation* (CV-64). AWC Branagan (SENSO) and AE2 Tinsley (airborne trouble-shooter) assisted with checklists while the pilot and COTAC determined their plane's handling characteristics.

Lt. Aiken flew an OK-underlined, no-leading-edge-flaps, single-engine pass.

# BRAVO ZULU

Lt. Charles P. Crooks  
VA-37

Lt. Crooks was doing touch-and-goes in the day FCLP pattern at NAF Whitehouse, an outlying field eight miles north of NAS Cecil Field. After the LSO waved him off, Lt. Crooks saw his A-7E's master caution light illuminate with associated warnings for the main fuel pump and the No. 1 fuel boost pump. Although the arresting gear was located midfield, 4,000 feet from the runway's approach end, he decided against trying to salvage the approach and land.

Lt. Crooks climbed to the downwind pattern and reduced power. The fuel boost pump light went out, but indicated fuel flow for level flight was high, more than normally available at military power. Another aircraft in the pattern saw what seemed to be smoke coming from Lt. Crooks's Corsair.

Instead of trying to return to NAS Cecil, Lt. Crooks decided to make an arrested landing at NAF Whitehouse. With help from the LSO, he made a midfield arrested landing and immediately secured the engine.

Postflight inspection revealed that a fitting on the engine's main fuel pump had failed, resulting in a massive fuel leak into the engine bay.



Left to right: Lt. Claudia P. Wells, USCG; Lt. Ivan Pupulidy, USCG

Lt. Claudia P. Wells, USCG  
Lt. Ivan Pupulidy, USCG  
USCGAS Corpus Christi

After a one-week deployment to Opa Locka Airport in Florida, the HU-25A Falcon crew headed back to their home base at Corpus Christi. The Florida weather was 1,200, overcast, with three miles visibility. Winds were 120 at 10, and the Opa Locka runway was wet.

Immediately after takeoff, Lt. Wells (aircraft commander) and Lt. Pupulidy (copilot) saw that the landing gear doors would not close, and they recycled the gear, to no effect. They decided to return to Opa Locka.

While they received vectors toward a final approach, the Falcon's No. 1 hydraulic system failed, with total loss of No. 1 pressure and fluid. The in-board slats on both wings immediately retracted. Recognizing the potential for fire in the rear compartment, Lt. Pupulidy asked to secure the auxiliary power unit. With the gear up and the flaps at 20 degrees, the crew placed the standby hydraulic pump handle full right for No. 2 hydraulic system gear extension.

With the gear down and locked, both pilots noticed that system No. 2's

hydraulic fluid and pressure were depleted, leaving the aircraft with minimal flight control and no airbrake, flap control or nosewheel steering. They calculated a new landing speed, 30 knots above normal.

While on short final, with both pilots at the controls, they decided that they could land safely. They touched down within the first 1,000 feet and quickly deployed the drag chute, using what marginal rudder control was available. With about 2,500 feet of runway remaining, no brakes and a speed of 40 knots, Lt. Wells and Lt. Pupulidy applied the parking brake. The Falcon stopped 1,500 feet from the end of the runway. The crew quickly left the aircraft and applied downlocks to the main gear struts.

Damage to the aircraft was minor; two hydraulic pumps and a standby hydraulic pressure hose needed to be replaced. This was the first total hydraulic failure in the Falcon and, as a result, procedures for the Dash-1 (flight manual) are being revised to emphasize that the standby pump hydraulic line might separate.

21

# Back, Back, Back, Back

The WESTPAC night was blacker than the inside of a bowling ball with no hint of an horizon. We had a SSC mission with a crew consisting of the det OINC (HAC), an H2P who was TAD from a different LAMPS det, and an aircrewman who was known for his competence. These three intrepid aviators launched from the frigate, confident that the troubleshooting during the hot-crew swap had solved the periodic but persistent problem with the runaway trim. The Seahawk performed well. After an hour-and-a-half of identifying and reporting the position of the WESTPAC fishing industry, it looked like the hop would be another radar drone-ex.

Sixty miles from Homeplate, the cyclic started drifting left. As the pilots corrected, the problem intensified until they had to use so much force that they lacked the subtle control necessary for landing on an FFG's dark, pitching deck.

The crew secured the trim on the automatic flight control system (AFCS) which seemed to solve the problem. Unfortunately, other systems (such as heading-hold, automatic coordinated turn, and most importantly, altitude hold) also disappeared. Flying without trim is not really difficult, just different. The crew hawked the instruments, especially the radalt, as they made their way back to the ship.

The HAC was in the left seat as the LSO reported that only the port rapid securing device (RSD) was available. The pilot in the left seat can't normally see much of the deck during a port-RSD landing. Since he had several thousand more hours than his copilot's few hundred, the HAC said,

"I'll take this landing."

The H2P replied, "It's yours!"

They briefed the approach and landing thoroughly before they started down, and all three crewmen knew that to avoid falling into the black hole, without altitude hold, their approach and final hover would be a little higher than normal.

PH2 Dave Loveall



## *Again, the HAC misread his highhover cues and started to move forward.*

The approach was standard with the crewman and H2P making calls about altitude, groundspeed, and closure rate. They ended up just where they wanted to be: over the deck. However, the hover was higher than normal, the cross-cockpit view was restricted, and they were worried about sliding aft, off the flight deck in a blinding sheet of spray from the rotor wash. All these things led the HAC to misread his visual cues.

Instead of believing that he was high over the deck (which he was), when he saw his hover cues lower than normal in the windscreen, he thought he was too nose-up, drifting aft, and would soon be behind the ship 30 feet above the water. To correct this perceived nose-up attitude, he lowered the nose, making the aircraft move forward. The hover cues moved even lower in the windscreen, and he added still more nose-down.

As they moved well forward of the line that indicated the boundary for blades in the hangar, the crewman, the LSO and the copilot started calling, "Back, back, back!" in voices that rapidly increased in pitch. The H2P had stopped being a copilot and had become a spectator. Instead of calling for a waveoff when he got uncomfortable, he waited for a dangerous situation to develop before he found his voice.

It was not until the horizon reference system (HRS) and stabilized glideslope indicator (SGSI) appeared in his chin bubble under the instrument panel that the copilot figured that the rotor disk was over the O-2 level which contained a CIWS and three 16-foot HF whip antennas. He decided it was time to bug out. The HAC decided the same thing at the same time. The H2P started to say, "Wave it off!" He felt the collective rise and heard the HAC call, "I'm waving off."

As they rocked forward to a takeoff attitude, the H2P heard a loud bang as a heavy vibration began. They climbed almost straight up to 175 feet with no airspeed, no horizon, and no ideas. Both pilots were on the controls trying to maintain a steady attitude in spite of the vibrations as they transitioned to level flight.

The vibrations blurred the instruments but the H2P saw 15-degrees nose up, followed by 10-degrees nose down. Eleven-degrees nose up came and went as the AW constantly called radar attitude from his nav parameters screen. The vibrations eased when the pilots reduced power to level off. The aircraft was controllable, but uncomfortable.

They settled down at 500 feet, straight and level, inhaled gratefully a few times and took stock. Things were bad, but not critical. The aircrew now had an almost-unhealthy (for airdales) desire to get back onboard the FFG.

They set up a nice, long two-mile final and went over the approach brief again. The aircrewman's job was to call doppler groundspeed, and the H2P would call altitude and closure rate. Again, the HAC's approach was flawless and they ended up in the same high hover over the center of the flight deck. Again, the HAC misread his highhover cues and started to move forward.

Once a night is enough for anyone, and the H2P got on the controls. He pulled aft-cyclic as a chorus of "Back, back, back!" filled the air. Then they drifted back and right along the length of the flight deck to just over the aft right net. Luckily, the entire flight-deck environment was now in clear view for the HAC in the left seat because the copilot was looking at a lot of empty black space. The HAC's visual references clicked back into place and he made a free-deck landing into the RSD.

One rotor-blade tip cap had to be replaced, one HF antenna was six inches shorter, and three aviators had bad shakes. It was a vivid lesson in successful crew coordination and the need for junior pilot initiative, even when teamed with an experienced, senior aircraft commander.

When he returned to his own det, the H2P briefed all of his aircrew on the incident, lessons learned, and his reactions, good and bad. The experience stood them in good stead when an almost identical situation occurred about a month later. This time, the crew made a safe recovery without damage. ◀

Lt. Knehan flew SH-60s with HSL-45. He is currently assigned to HSL-41.

# Coordinate, Aviate, or, How I Got ACT'd

By Lt. Steve Chennault

PH2 Joseph Horner

**OK,** what's going on here? What happened to the reverence, the respect for us 2,000-hour guys? Where did all these aggressive ensigns and jaygees come from? Geez, when I came out of the RAG, I was scared to even talk to the senior lieutenants and lieutenant commanders, let alone the XO or CO. Especially in the cockpit! They were gods, kings of the aircraft.

24 I was just a sandbag along for the ride to maintain weight and balance. Once in a while I got to touch the controls, but usually it was just sit and listen. But now, if I'm just a little off altitude and I hear, "Uh, you're 10 feet off altitude, sir." Man! What's happening?

I've proved myself. I've studied long, hard hours. I'm king of the aircraft now. I'm a HAC! I've flown my share of black-bottom nights and squirmed through two HAC boards. That doesn't mean anything to these young guys.

Well, I'll tell you what it is: these people are getting "ACT'd." Aircrew coordinated training. The skipper is making everyone go through it. I figured it was one of those three-day Navy schools that could be done in a half-a-day.

A funny thing happened through ACTS: they started telling us stories about how pilots were flying into swamps because they were looking for a five-cent bulb, or how some guy flew off the end of the runway because he was too busy telling jokes while his copilot kept saying, "You're too high, and too fast." These tales got my attention.

I've just completed ACT and the main emphasis is to get multi-seat crews to exchange thoughts and



ideas. Does the following scene sound familiar? You're flying along, and everything's cool. Then you notice that you're copilot isn't flying the plane, and neither are you.

"Hey," you scream, "who's flying this thing?"

"I thought you were," he gulps.

Aircrew coordination is the flight crew's ability to use and integrate all available skills and resources to achieve efficiency, situational awareness and mission effectiveness. In other words, whatever it takes to stay out of the hurt locker. Sometimes this

means that someone has to be aggressive.

ACT teaches us that everyone onboard the aircraft has a vital role in completing the mission safely. It also teaches nuggets that old salts like me aren't gods, and that the new guys have important places in multi-seat aircraft.

So, go ahead, you nuggets, be assertive (I said "assertive," not aggressive) and keep me honest. And don't forget the guys in the back. Listen to them.

They have a big say-so in these matters, too. They're experienced and have suggestions that could make a difference between swimming and walking home.

If you coordinate with everyone in the aircraft, you accomplish two things. One, you let everyone know what you're thinking, and two, it gives everyone a chance to discuss options. So, listen to them; what they say may save you from that long dance down the green table, or worse!

Lt. Chennault is an H-60 pilot with HSL-46's Det 7.

## A Progress Report on ACT

By Robert A. Alkov, Ph.D.

The combined Class A, B & C aircrew-error mishap rates for helicopter and the A-6/EA-6 communities have declined dramatically since the introduction of Aircrew Coordination Training (ACT).

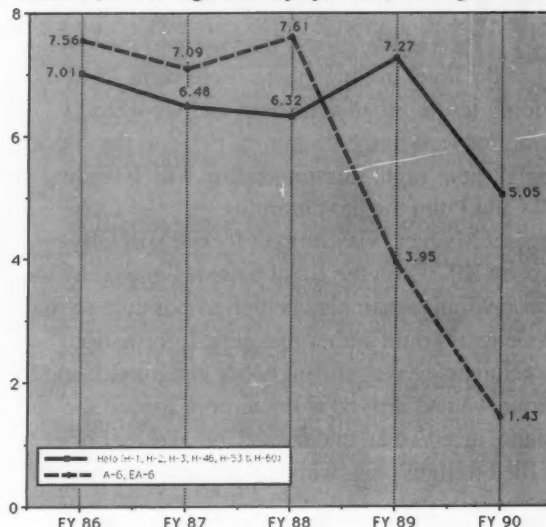
The program started in 1988, when the Link Training Services Corporation (formerly Allen/Simuflite), under contract from the Naval Safety Center, began providing ACT for more than 45 Navy and Marine Corps Readiness Training Squadrons (RTSs). The communities covered include all operational helicopters, A-3, A-6, EA-6, F-14, E-2, E-6, S-3, P-3, C-2, C-9, C-12 and C-130.

CNO (Op-05) has now assigned sponsorship of ACT to Op-59 and has asked the Naval Safety Center to continue administering the contract through FY-91. CNO has also tasked the Naval Air Systems Command (PMA 205) to have the staff of the Naval Training Systems Center in Orlando research how to incorporate ACT principles into all aviation training syllabi.

Currently, ACT is being introduced in the six training wings, which fall under the Chief of Naval Air Training. Because of ACT's success, the Air Force has adopted the Naval Safety Center's program for its Air Training Command, calling it "Tactical Task Training." Various Army helicopter training units also use the ACT program.


The Marine Corps Combat Development Command has begun an instructor's course at

**Aircrew Error Mishap Rate**  
Navy and Marine Corps A-6, EA-6 and Helicopter  
Class A, B & C Flight Mishaps per 100,000 Flight Hours



Quantico to teach ACT (renamed flight coordination) to all Marine aviation squadrons. Ultimately, ACT principles will be used by all air warfare communities, including single-seat aircraft.

Dr. Alkov is a former Naval Aviator and head of the Naval Safety Center's Behavioral Sciences Branch.



# Thor's Wakeup Call

By Lt. Glenn C. Cosnell

26

**W**e had loaded our luggage into the vans in front of the hotel in Singapore. There were 15 of us, including four civilian scientists, and we weren't looking forward to the 45-minute drive to the airport, or the 12-hour night mission ending with a landing at NAS Cubi Point the next morning.

"Project Magnet" was simple: fly our specially-equipped RP-3D on the flight path designated by the senior civilian researcher, as high as possible so that the scientists could gather magnetic information.

Singapore was stiflingly hot and humid, and by the time we had arrived at the airport, loaded the airplane, received an understandable weather brief, and filed a flight plan, we were all tired and soaked with sweat.

Magnet missions tend to have that effect on you. You normally take off at sunset, fly through four time zones and land in a foreign country soon after sunrise. A few hours after postflight, transportation hassles, language barriers, billeting problems, and a message to home base, you try to get a few hours sleep and eat some recognizable food. Forty-eight hours later, you do it all again.

We took off at 1700 local, which, after being on the road for five weeks, didn't mean anything. Our circadian rhythms were way off. As usual, the four of us in the cockpit strained to understand and follow the controllers' instructions. By the time we were out of VHF range, it was pitch black outside and we felt wasted. It wasn't that we were so physically tired; it was more that we felt burned out. Tempers grew short. The effects of jet lag were very real.

As I went aft to the galley for coffee, I noticed that the navigator and two civilians were the only ones awake. Everyone else was sleeping in various places and positions.

*Good, I thought, only slightly envious, maybe we all won't be so touchy after a long nap.*

The hours dragged on and staying awake in the cockpit was becoming almost impossible. The flight instruments were a motionless blur. There was no one on the radios, nothing visible outside and the talking on the ICS and in the cockpit were at an absolute minimum.

Somewhere in this semiconscious state, I looked outside and thought I saw something in front of us. Not another airplane or a UFO, just an area of sky that seemed darker.

## A lifetime later, we exited the storm into a bright, calm, starry sky.

I turned to the pilot at the controls and said, "Does that look like clouds ahead of us?"

"Sort of, maybe...I don't know," he replied faintly.

A few minutes went by and I began to think that my eyes were playing games with my mind. Sometimes I could make out an extremely faint outline, then it was gone. Even the few stars I could see seemed like candles that were snuffed out, then relit. I began to grow uneasy.

I didn't want to annoy my irritable senior pilot, so I asked gingerly, "Do you see anything out there?"

"Tell radar to take a look," he replied.

I switched my mike to ICS and called, "Radar, flight." No answer. I tried again. "Radar, flight. Are you up?"

"Yeah, what do you want?" It was the navigator, the senior officer on board.

"I wanted the radar operator to take a sweep in front," I said.

The tired voice said, "He's sleeping...just a minute."

I scanned the sky with increasing interest. A minute later, the navigator's voice was in my headset again.

"There's nothing out there." Obviously, he had brought the radar up himself and was satisfied that our flight path was clear. I looked at the other pilot and the flight engineer. We were all thinking the same thing. The navigator was not a qualified radar operator. Should we trust him and go on, or do we openly question his judgment and ask him to wake up the radar operator? Things were already tense between us tired crew members. We discussed it and decided to drop it. A few minutes later, we wished we hadn't.

As we entered the line of thunderstorms, we were thrown around the sky. The autopilot immediately disengaged, strobing the cockpit with flashing red warning-lights. Lightning bolts surrounded us and St. Elmo's fire lit up the cockpit like daylight. The front windscreen looked like television at 0400 after the late show. Torrential rain and ice pelted the

aircraft. A second later, the high-pitched voice of the radar operator blasted through the ICS. "Flight, radar. Maintain your heading. I'll try to steer us out of this!" I looked at the PIC. We couldn't do much but hang onto our yokes with white knuckles. Our large, four-engined aircraft was all but out of control.

"How far to the other side of this, radar?" I yelled.

"I'm looking."

We knew the erratic pitching and rolling of the P-3 made the radar nearly useless. I looked out at the props where a large ring of St. Elmo's fire glowed around the arc. The blue light was growing wider and thicker, and was starting to advance a few feet in front of the props.

"Flight, radar. It looks like it's about seven miles thick. This heading is as good as any."

*Damn! We'll be out of it in two minutes*, I thought, trying to assure myself that this aluminum tube wouldn't be our coffin. Straining in my harness, I thought about my wife and infant son. God! How I missed them. An eternity later, I called back to radar.

"How much farther?"

"I don't know. I think it's building as we get into it..."

A lifetime later, we exited the storm into a bright, calm, starry sky. We survived, but not without damage. The cabin had gear all over. We had taken a lightning strike on the No. 1 prop and all the paint was burned off all the leading edges. There were various scrapes and bruises, but no broken bones or major injuries. The rest of the flight was quiet and uneventful, but I don't think anyone slept the rest of the way; I know I didn't.

Later, I thought about all the dumb mistakes we made that night. Stupid things like accepting a marginal weather brief and not having the radar manned. Those were black and white. What wasn't so obvious were the human factors that have a deadly effect. We were tired, irritable, and complacent, and once these problems had infected us the situation was bound to deteriorate. ◀

Lt. Cosnell was with VXN-8 at the time of this incident. He now flies with VT-3.

# NEAR

By Lt. Clifford D. McGlamry



## Hummer-Bummer

28

**Our** det to NAS Island was finished and it was time to fly our two E-2C Hawkeyes back home. The two-leg flight should have been routine. I was the CICO (Combat Information Center Officer) under training and the hop would be a breeze. With no mission requirements, I would be able to practice using the software and do some NATOPS training with a nugget in the RO (Radar Operator) position. I could also demonstrate to the flight's mission commander my own progress toward my mission-commander designation.

The night before we left, many of the aircrew decided to go into town for a little celebrating. Others, like me, were tired and hit the rack right after supper to be ready for our 0600 brief.

After checking out of the BOQ the next morning, I talked with the other crew members in the lobby. The plane commander looked haggard. He was guzzling coffee by the quart and asking for aspirin.

The warning bells should have started ringing in my mind, but I didn't think too much about it. The base taxi arrived and we shuttled over to base ops.

As we manned up, I heard the pilot remark several times to his copilot about how rotten he felt. Again, the bells should have gone off, but they didn't.

Engine startup was normal and we buttoned up the main hatch and began strapping in for takeoff. During taxi, the pilot repeatedly missed calls from the tower and the copilot had to urge him to respond.

The takeoff was normal but then the problems began coming faster than the pilot could handle them. As we switched to Island Departure, we began receiving random radar vectors to sequence our aircraft around the numerous civilian traffic corridors around the island. At this point, the copilot had to spend so much time hawking his pilot that he, too, began missing Departure's calls.

The pilot kept complaining about how bad he felt and the copilot finally asked him when he had come in the night before. I got a sinking feeling in my stomach as I heard the pilot say he had turned in around 0400 after a night of "power drinking."

Almost instinctively, I cinched up my straps and double-checked my koch fittings. We quickly divided up some of the duties in the back. I turned on the back radios and tuned them to our assigned ATC frequency and turned the volume up loud. The RO began monitoring all air traffic within 50 miles of our aircraft and I watched the repeater instruments in the back as the mission commander discussed our options with the copilot and me.

Fortunately, our plane commander was in no mood to argue since he had a headache and was more than willing to take a nap, leaving the copilot to fly the airplane. We were very lucky that the copilot was one of the best pilots in the

squadron. He managed to get us back to CONUS AFB without incident. The mission commander and I tried to talk the copilot into taking over as plane commander. He felt he could handle the situation without that action, and we went along with his decision.

Our pilot slept all the way home, but the rest of us were on pins and needles. For the life of me, I couldn't figure out how I had let myself be talked into this situation. How on earth would we explain our actions if something happened?

Nothing happened, though, and we made it home safely. I sure learned a lot from that flight. If I was in doubt, I should have tried to delay our manup and find out why the pilot wasn't feeling well. It would have been better to get home late in our airplane than in a body bag. Then, after we were in the plane and discovered our pilot's problem, we should have immediately shut down and gotten out.

If, however, we were pressured to go, in spite of an intoxicated crew member, we still should have refused. All sorts of mechanisms were available to protect us for making the right choice even if it is unpopular.

I hope my story will help the newest, most junior aviators and NFOs realize that no one has the right to force them to do something wrong. I would much rather explain why I wouldn't get into the airplane to my CO than go on the flight and have a mishap.

*There is absolutely no excuse for an aviator showing up at the brief intoxicated. Similarly, his crew has the responsibility of refusing to man up if any one of them is drunk. No one can drink until 0400, grab two hours of fitful sleep and arrive at a 0600 brief ready to fly.*

*This relatively junior crew decided to keep this incident to themselves with the understanding that it would never happen again. That was wrong, too. Besides refusing to fly, they should have gone directly to the CO.*

*What was the command atmosphere that would have made these young aviators keep this incident hidden? As a useful tool for protecting crew members and aircraft the skipper should make a strong statement supporting any action needed to keep intoxicated crewmen out of planes.*

*As part of the team, we are responsible for how other crew members conduct themselves, particularly in the airplane. It's your life — and theirs — as well as the safety of the aircraft and the mission. — Ed.*

Lt. McGlamry is an NFO with VAQ-33.

## No Harm, No Foul?

by Cdr. D. L. Jackson

A young, bold pilot was stopped on his way out of the main gate for DUI. The incident was unbelievable for two reasons. It happened just before noon; and just prior to being stopped, the pilot had briefed, flown and debriefed a complicated hop.

The mission had gone without a hitch. No one noticed, or if they did, they didn't intercede. No harm, no foul, right?

Years later, another crew manned up their fighter after "booming" well into the early morning hours. Although squadronmates could tell the crew was impaired, they said nothing. The jet launched and never returned. Both aviators were found dead days later in a remote part of the Philippine jungle.

In the latter incident, if one person would have stood up and identified an unsafe situation, the mishap could have been prevented. Every aviator is responsible for breaking the chain of events when confronted with a squadronmate's unsafe flying habits or personal conduct.

The NATOPS guidelines on drinking have grown from 8 hours "bottle to throttle" to 12 hours "bottle to mission planning" because aggressive Naval Aviators continued to press the limit. Authority protects us from ourselves.

While the current standards are more strict, they should not be interpreted as a guarantee of alcohol-free blood at mission-planning time. Individual metabolic rates also factor into the equation.

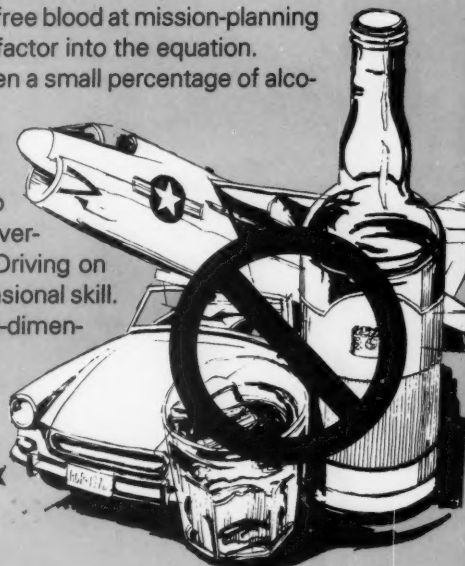
Hangovers are physiological. Even a small percentage of alcohol in the blood can affect performance, especially at altitude. The state of California recently reduced the DUI blood alcohol content from 0.10 to 0.08, which can be achieved by the average person after four mixed drinks. Driving on the freeway is (generally) a two-dimensional skill. It's a far cry from the Mach-plus, three-dimensional world of a tactical jet.

It's no secret and it's not subject to change. A Naval Aviator's maximum Flying Under the Influence (FUI) blood alcohol content remains at 0.00.

Cdr. Jackson is the CO of VF-2.

approach/january 1991

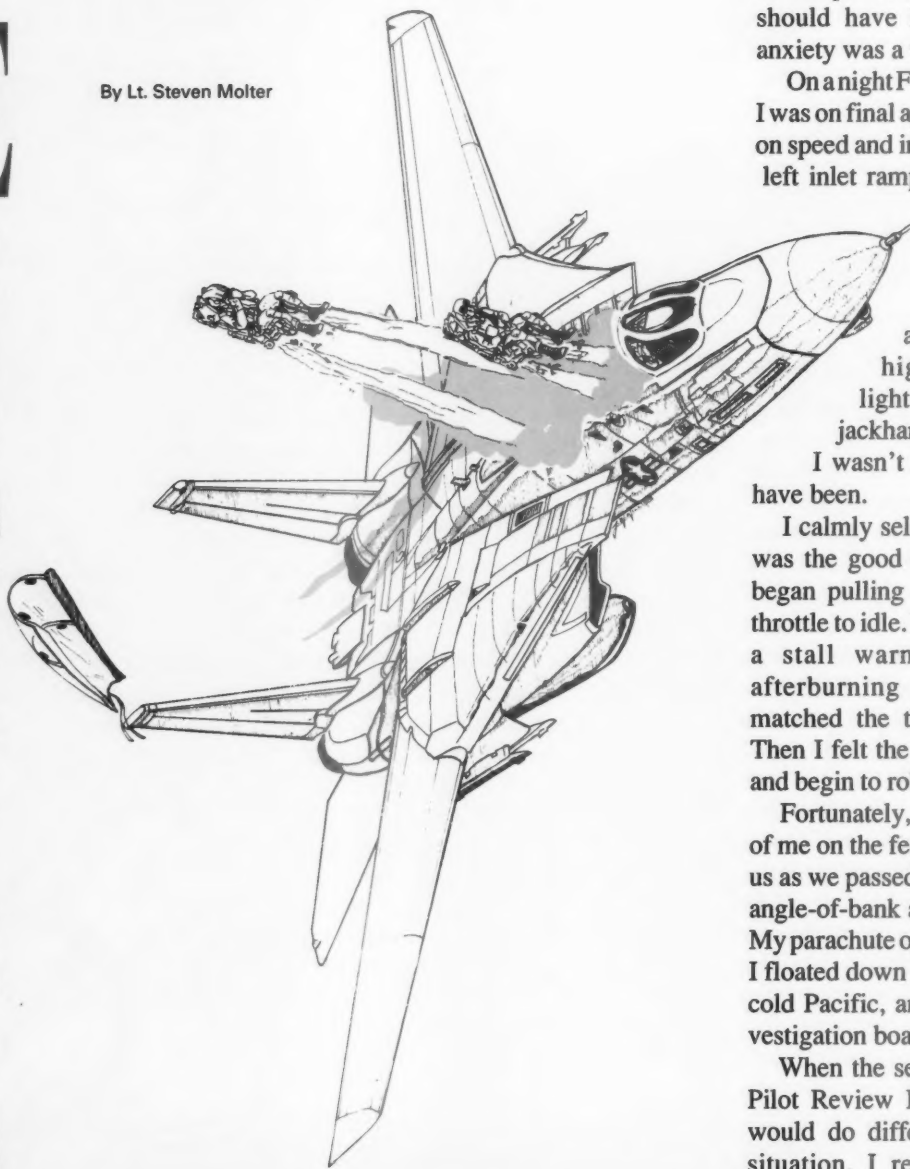
29



# Calm, Cool...and

# Ejected

By Lt. Steven Molter



I was a first-tour aviator with one cruise under my belt. My squadron was into its turnaround training cycle and we had recently finished a visit to Fallon, FFARP and the Fighter Derby. I had 586 hours in the Tomcat and I was happy with my performance. For the first time in my flying career, I was getting comfortable in my airplane and I no longer had preflight butterflies. It was a new experience not to be anxious; I should have known this lack of anxiety was a warning signal.

On a night FCLP at San Clemente, I was on final approach at 1,200 feet, on speed and in the goo. The F-14's left inlet ramp came out of its up

locks causing multiple, violent compressor stalls.

It was like being in a dumpster with a high-powered strobe light accompanied by a jackhammer on the lid. But,

I wasn't scared, but I should have been.

I calmly selected what I thought was the good engine's burner and began pulling the stalled engine's throttle to idle. I stopped when I saw a stall warning light on the afterburning engine. I quickly matched the throttles at military. Then I felt the aircraft yaw rapidly and begin to roll. Now I was scared.

Fortunately, my RIO was ahead of me on the fear meter, and ejected us as we passed through 90-degrees angle-of-bank and 1,000 feet AGL. My parachute opened at 300 feet and I floated down facing a swim in the cold Pacific, and two weeks of investigation boards.

When the senior member of the Pilot Review Board asked what I would do differently in the same situation, I replied, "I wouldn't

crash." I was not trying to be flip-pant. I clarified my answer by discussing how I would analyze which engine was malfunctioning and how I would recover the aircraft.

With a question that was also a comment, the board member asked, "What makes you so sure that with the flash blindness and spatial disorientation you experienced, you would not select the wrong engine again?" I don't remember what I

answered, but I think the light bulb burning brightly over my head satisfied the board.

I was now painfully aware that I had selected the wrong procedure, but why? I recalled my first flights in the F-14 when I was less familiar with the plane and somewhat intimidated by it. If I'd been in a similar situation back then, I am convinced I would have selected Single-Engine-On-Takeoff/Catapult instead of the

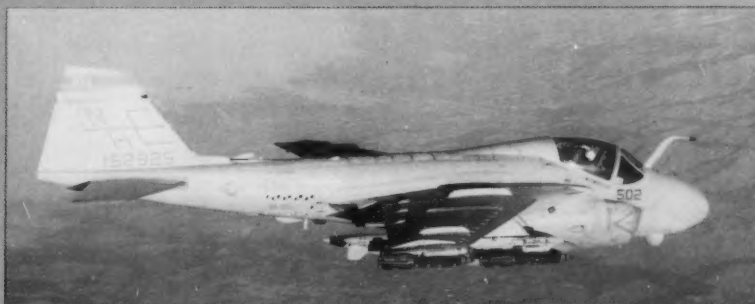
Compressor-Stall emergency procedures. The smug, self-satisfied aviator I had become was so confident that I could save a TF-30 engine from eating itself that I disregarded the basics of flying the aircraft first.

If you find yourself in your aircraft feeling more relaxed than you have ever felt, watch out! Check your knowledge of the plane and your performance. Get pumped up for every flight. ◀

Lt. Molter is an F-14 pilot with VF-51.

# 1990

## approach WRITING AWARDS



### Command Writing Award

VA-95 (third year in-a-row)

### Contributor of the Year

Cdr. Mark Danielson,  
Safety Officer, NAS Dallas



### Honorable Mention

VF-2

Lt. Tim Roorda, Cdr. J.R. Worthington,  
Cdr. J.A. Bolcar, LCdr. L. Downs,  
AW2 T. Mann

### Article of the Year

"A Tale of Two Ready Rooms,"  
by Cdr. Lenny Fox, VFA-94



MAR 11 1991

U.S. DOCUMENT  
RECEIVED DEPOSITORY

# 40

## FEET FROM HISTORY

By LCdr. Rick McHarg

**O**ur mid-cruise safety stand-down was fresh in

our minds as we briefed for a two-plane tactics flight. We covered the bombing pattern in detail and the low-altitude tactical maneuvering to follow. We were experienced second-tour, second-cruise Intruder crews, and we went through our individual crew briefs after the section briefs. For an extra

margin of safety, we briefed a comfort altitude of 500 feet. We launched into the moonless night. Everything went fine through rendezvous, bombing and tactical maneuvering.

Our wingman pulled into loose cruise while we flew straight and level. As lead, we detached Dash 2. I was looking outside, with my head turned to the right. As I expected, our wingman banked right and be-

gan a slight climb. A few seconds later, satisfied we were clear of each

inside and yanked the nose up, my head slammed back against my seat's

headrest and I broke into a cold sweat. We kept climbing through 15,000 feet.

I ran through the sequence over and over: the "clear to detach" call, watching Dash 2 clear up and right as we descended to our brush with death; I heard no LAWS tone, and our attention was focused outside.

It was quiet the rest of the flight, but we knew exactly where the radar altimeter was set for marshal and the case III approach. After recovery, our crew debrief was much more thorough than usual. We examined what went wrong and how we needed to change our respective responsibilities. That night changed the way I did business in the cockpit. ◀

LCdr. McHarg is a BN with VA-165.



Bob Lawson

***"Pull up! Pull up!" I screamed.***

other, I came back inside for my customary run through the flight instruments before beginning our next phase.

I saw that my pilot was still watching our wingman as I glanced at the radar altimeter. My blood froze. The radalt had gone through 50 feet, headed for 40.

"Pull up! Pull up!" I screamed. As my pilot whipped his head back

# BROWNSHOES IN ACTION COMIX

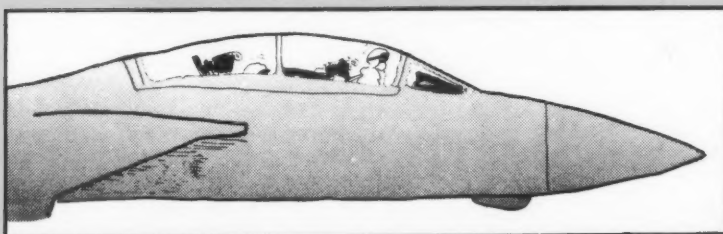
"The kind real aviators like"

Contributed by Lt. Ward Carroll

"Sure, we all know NORDO procedures, but how does a guy convey *really important* information to his wingman after his radios have given up the ghost? Try these!"

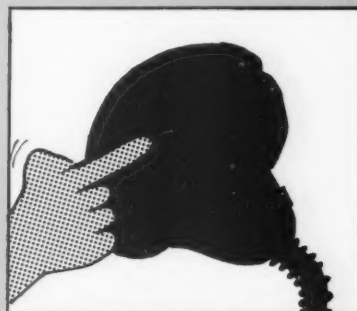


**Pilots and NFOs alternately raise and lower seats, giving a see-saw illusion**



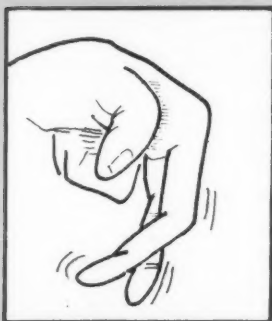
"Yes, we're NORDO, but as you can see, we haven't lost our sense of humor."

**Simulate a gun against head**



"Everyone out here is trying to kill me, including you."

**Make the "fingers do the walking" sign**



"Immediately after we trap, I'm putting in my letter."

**Crew does "the wave"**



(PILOTS ALWAYS KEEP ONE HAND ON THE STICK.)

"We'd rather be in our dens watching the super bowl"

**Deal yourself  
a good hand  
in**



**AIRCREW  
COORDINATION**

